In-Vitro Comparison Study of Different Commercial Brands of Paracetamol Tablets

Rout SK*,1, Dutta S1, Sengupta M1, Rout B,2

1L.B.Rao Institute of Pharmaceutical Science & Research,Khambhat,Anand,India
2Vashkara college of Pharmacy,Andhra pradesh,India

Abstract
The aim of the present work is to compare different commercially available branded with low and high cost of different company paracetamol tablets, as it is general psychology/concept that the cost of the different branded are vary as per the quality of the drug.Comparative evaluation of different tablets were done includes some simple test like disintegration time, hardness test and weight variation. The results of hardness, thickness and weight variation fulfilled the official requirements. The results of the study revealed that the quality of low cost tablets are comparable to that of highest cost branded tablets of paracetamols were irrespective of the general psychology/concept that quality of different branded tablets having different cost. Hence this study consists to change the view towards patient, pharmacist, doctor and other health care practitioner.

Keywords: Paracetamol, Cost, Disintegration Test, Hardness Test, Pharmacist.

Introduction
Paracetamol is a well accepted antipyretic and analgesic drug used in fever, mild headache, migraine and also joint disorders. The main aim of present work was to compare different commercially used branded with cost difference of paracetamol tablets as it is a general concept that the low cost tablets are inferior/low quality than the high cost brand products.

Materials and Methods
Paracetamol tablets were obtained by purchasing from Baba Medical Stores, Khambhat, Anand, Gujarat from market. Six commercially available brands of Paracetamol tablets [Paracip(CIPLA), CALPOL(GLAXOSMITH), Malidens (NICHOLASPIRAMAL), CROCIN (RE MIDEXPHARMA.LTD), Pyramed (ALKEM), Femol (MEDIWINPHARMA-CEPTUALS)] all chemicals and reagent used were of analytical grade. All the tablets were characterised for hardness, weight variation, friability, disintegration, as per official procedure mentioned in pharmacopoeia.

Results and discussion
Evaluation of different tablets are carried out to determine the following properties of tablets.
1) Weight-variation.
2) Hardness.
3) Friability.
4) Disintegration time.

Conclusion
The results of the study revealed that the quality of different branded products including highest cost and lowest cost is not significantly different. Among all the different branded of paracetamol tablets, as per friability parameter femol gives a better result than other brands, though the result of friability of all other brand of tablets are within the limit. It is seen that hardness of Paracip is more compare to other paracetamol tablet. So it also seen that on that case the disintegration time is more comparatively to other brand. Except that tablet other brand of tablets are more or less same disintegrating time and it also concluded that less hardness of the tablets are having less disintegration time. So on the result of all the different brand tablets femol is giving acceptable result. So it is concluded that not all the time cost reflects the type of tablet, it also depends on how the formulation is prepared and the responsibility of the formulator towards patients.

*Corresponding Author: Susanta kumar Rout
L.B.Rao Institute of Pharmaceutical Science & Research,Khambhat,Anand,India
Email Id: susanta_rout@rediffmail.com
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### Experimental work

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Name of brands</th>
<th>Weight variation</th>
<th>Hardness</th>
<th>Friability</th>
<th>Disintegration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paracip</td>
<td>Max:+ 0.25 Min: -0.08</td>
<td>4.62 kg/sq.in.</td>
<td>0.42%</td>
<td>69 sec</td>
</tr>
<tr>
<td>2</td>
<td>Calpol</td>
<td>Max: +4.02 Min: -3.72</td>
<td>2.16 kg/sq.in.</td>
<td>0.46%</td>
<td>56 sec</td>
</tr>
<tr>
<td>3</td>
<td>Femol</td>
<td>Max: +2.4 Min: -0.61</td>
<td>2.95 kg/sq.in.</td>
<td>0.38%</td>
<td>59 sec</td>
</tr>
<tr>
<td>4</td>
<td>Malidens</td>
<td>Max: +3.2 Min: -3.3</td>
<td>2.14 kg/sq.in.</td>
<td>0.88%</td>
<td>59 sec</td>
</tr>
<tr>
<td>5</td>
<td>Pyrakem</td>
<td>Max: +3.3 Min: -5.08</td>
<td>1.86 kg/sq.in.</td>
<td>0.50%</td>
<td>53 sec</td>
</tr>
</tbody>
</table>

### References

1. Indian pharmacopoeia, Government of India, Ministry of Health and family well fare, Controller of publication, New Delhi, 4th edition, 1996, 244.